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Green grabbing debate and Madagascar: did we learn anything?

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Abstract: Green grabbing is a scholarly critique of conservation efforts. Scholars of green grabbing argue that many conservation strategies – such as the designation of protected areas and the creation of market-based conservation mechanisms – are designed with the intent to dispossess local peoples and capitalise natural assets. First, to provide some context on the green grabbing debate, we discuss the trade-offs between conservation and development objectives. In addition, we refer briefly to the broader land grabbing debate of which green grabbing is a sub-component. Second, we question the theoretical foundations of green grabbing, the concepts of primitive accumulation and commodification of nature. Third, we compare data collected by the green grabbing scholars and conservation NGOs from the very same site in Madagascar. We conclude that rigorous post-intervention stakeholder analysis, rather than pre-intervention analysis, is needed to effectively evaluate conservation outcomes, and that research on conservation strategies should pay attention to the role of the state, and the heterogeneity of local communities.

Keywords: green grabbing; Madagascar; primitive capital accumulation; economy of repair; stakeholder analysis; World Wildlife Fund; WWF; state intervention; pre- and post-conservation agreement; household incomes; deforestation.

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1 Introduction

Scholars have long recognised the potential contradictions and tensions between environmental conservation and rural development in developing countries. Over the past 20 years, research has identified many challenges associated with achieving those two desirable objectives (Miller et al., 2011), highlighting trade-offs that may call for hard choices (McShane et al., 2011). For instance, one important critique of first generation conservation strategies, such as the designation of protected areas that outlaw resource use, is that they often have significant impacts on the livelihoods of local resource users. And despite the promise of a ‘win-win’ for both people and the environment, the results are often mixed for second generation approaches to conservation that emphasise sustainable development, community-based resource management and market-based mechanisms. Green grabbing is a critique of these conservation efforts, one that relates to the larger debate on land grabbing (the acquisition of land by large private investors). Green grabbing occurs when conservation strategies promoted by international NGOs and private interests dispossess local peoples of their rights to resource access and use, thereby promoting current or future capitalisation of resources. According to Corson et al. (2013, p.4): “Green grabs can encompass appropriation of land and resources for biofuels, carbon and biogenetics; while in some instances, they entail complete alienation of peasants from land, in others they involve changes to rules, institutions, and the configuration of authority that determines access and control over resources”. Within the last couple of years, newspaper articles, conferences and scientific articles have been devoted to the debate on green grabbing (IIED, 2013, 2015; Litteraturhuset, 2012; Dini, 2012; Forster, 2012; Kelly, 2016).

In this article, we critically examine the concept of green grabbing in the context of conservation and development in Madagascar. We ask: is the green grabbing concept

useful for understanding protected area conservation and conservation outcomes in Madagascar?

The rest of the article is organised as follows. First, we provide some brief background on Madagascar, and an overview of our methods. Secondly, we discuss conservation and development tradeoffs, in order to provide context for the recent debates on land grabbing and green grabbing. Third, we discuss the theoretical foundations of green grabbing, highlighting problematic assumptions and logical inconsistencies. Finally, we examine the empirical evidence for green grabbing in Madagascar, and argue that it fails to account for post-intervention outcomes.

Why choose Madagascar? In many ways, Madagascar is an archetypical example of the hard choices associated with conservation and rural development in developing countries. Madagascar is one of the poorest countries in the world. It is also host to an astounding array of unique ecosystems and species, placing it in the biodiversity ivory league, among the megadiversity-countries (UNEP, 2015; UNDP, 2015). Institutions are also incredibly weak in Madagascar, with state legitimacy in free fall since beginning of the century (Razafindrakoto et al., 2015). At the same time, pressure for economic development has led to controversial land grab agreements with multi-national corporations. In 2008, the Korean company Daewoo signed a lease to 1.3 million hectares of arable land with the former Malagasy president Ravolamanana, an action that helped spur riots and protests in the capital. The violent confrontation between citizens and the president's security forces resulted in the president fleeing the country, and the mayor of the capital grabbing power in a coup d'état (Financial Times, 2009). Since the coup, illegal logging and other sources of deforestation have increased, due in part to weakening state authority and the suspension of international funding for environmental programs (World Bank, 2012).

When there is a power vacuum in weak states, international NGOs become the de facto institutions, as we will discuss later. NGOs like WWF create local offices and work with local partners to empower national environmental awareness movements. In the absence of state-based democratic accountability, strict rules of monitoring and evaluation requested by donors have driven NGOs towards a 'quasi' legitimacy process. If Malagasy state entities cannot be held responsible, international NGOs replace the requirement of accountability expressed by donors (Stroup and Wong, 2013).

2 Methods

Following a general review of the debate between conservation and development, we have adopted a twofold methodological approach in this paper. First, we consider the evidence for green grabbing by reviewing case studies from Madagascar. Secondly, we examine contradictory empirical evidence from a single site in eastern Madagascar, one where green grabbing scholars and a conservation group reached dissimilar conclusions about a conservation intervention

In regards to the conflicting findings from the specific site in eastern Madagascar, we compare data from World Wildlife Fund (WWF) with data from one of the green grabbing scholars (Corson, 2011a, 2011b; WWF, 2012). Corson (2011a, 2011b) collected data concerning the Ankeniheny-Zahamena and Fandriana-Vondrozo biological corridors. WWF (2012) collected data from the Fandriana-Vondrozo corridor.

The socio-economic studies by WWF were carried out within three different districts of Madagascar: Midongy, Fandriana and Vondrozo and (all districts belong to the former Province of Fianarantsoa). The distances of each district from Antananarivo are: 300 km for Fandriana; 734 km for Vondrozo and, 875 km for Midongy.

Forests in Midongy areas surround the Midongy Befotaka National Park. They are among the last remaining lowland forests in Madagascar (an altitude of 800 m or less). Due to the moderate relief and significant amount of wetlands, the threat of agricultural expansion is high. All the households interviewed supported themselves from agricultural activities.

Betsileo is the main ethnic group in Fandriana. They typically have two types of plots, one located inside and one outside the forest (next to the village located at 20 to 50 km from the forest). If funds for managing the village plot are lacking, the farmers let them lay fallow and start using their plots in the forest. The population within the Fokontany (the smallest administrative subdivision) was unknown when the survey was made. But, 2.5% of the population in the district was working with the WWF.

Antefasy is the main ethnic group in Vondrozo. They relied on both crop and cattle production. Within Vondrozo, the WWF did not have a program of forest restoration, but with the support of local authorities and the agricultural extension, people living inside the forest agreed to abandon the forest plots and manage the agricultural land at the edge of the forest. It is worth noting that these people appeared to need assistance in improving their agricultural techniques. In 2010, there were 50,000 inhabitants in Fokontany (smallest administrative area in Madagascar) where the WWF were operating. The percentage of population working directly with WWF activities was 9.5%.

In Midongy, the main ethnic group is Antesaka, and they relied primarily on cash crops. When the price of cash crops collapsed, they were forced to cultivate other crops, though the results were not always positive. In response, the WWF sought to improve agricultural practices for rice planting, vegetable cropping and poultry. There were 17,000 people in Fokontany (data from 2010) of which 5% were working directly with WWF (unpublished; WWF, 2010, 2011, 2012).

3 Trade-offs between conservation and development

Trade-offs between pure conservation and unlimited development has long been evident. Forest reserves date back to the 4th century in India, and areas preserved for wildlife and resources were a common feature of monarchical regimes in medieval Europe. In the modern era, the advocacy of preservationists in 19th and early 20th century led to the creation of the National Parks in the USA. Preservationists saw a clear distinction between human and natural systems, and argued that rigorous state protection was necessary to preserve the intrinsic and spiritual values of 'wild' places. The creation of protected areas in colonial and post-independence Africa likewise entailed top-down exclusion of local populations. And as the preservation of biodiversity emerged as an international priority the creation of 'fortress' conservation areas in biodiversity rich areas accelerated (Adams and Hulme, 2011; Romero et al., 2012).

Indeed conflicts over access to resources in protected areas have been common; systematic review has shown that the establishment of protected areas in several African countries has frequently resulted in the eviction of local peoples

(Brockington and Igoe, 2006). In the late 1980s and 1990s, as the social costs and challenges of state-based preservation strategies became apparent, tradeoffs between conservation and development were recast (Hulme and Murphree, 2001). Sustainable development, community participation, and market-based mechanisms came to the fore in international discourse as ‘win-win’ strategies that promised to promote both effective conservation and poverty reduction. Providing an opportunity for communities to design rules for resource use, for instance, can help promote effective conservation outcomes that are socially acceptable utilise local knowledge (Armitage, 2005).

Likewise, by re-conceptualising the value of nature in monetary terms, often through the development of markets for tourism or ecosystem services, conservation can theoretically pay for itself by providing local resources users with monetary incentives to preserve rather than exploit natural systems (Ferraro, 2001). The new conservation paradigm also entails new forms of governance. Instead of state centric regulation and protection – often problematic due to limited capacity and weak institutions – new approaches to conservation often involve hybrid governance regimes, with strong roles for international NGOs, local communities, and private interests (Lemos and Agrawal, 2006). However, despite their normative appeal and ubiquity in international discourse, the evidence for the success of many of these new strategies is often mixed.

Initial attempts to minimise restrictions to access in protected areas resulted in the development of Integrated Conservation and Development Projects (ICDP). These projects zone protected areas into core, buffer and transition areas (where limited development may occur), or transfer management rights to local people. Ferraro (2001) notes that the success of ICDPs is predicated on the assumption that regulation in the short run will result in changes to the actual resource exploitation pattern of local people, and that large scale investment in new technologies will result in rapid changes to patterns of exploitation. Studies note that there is no evidence that ICDPs actually shift households away from slash-and burn practices towards sustainable forest use (Miteva et al., 2012). Blanc-Pamard (2012) also notes that zoning can lead to quite different results depending on the existing power structures in the local villages. In one village, existing land control was reinforced, and in another zoning resulted in competition between clans. Meta-analyses of the ecological repercussions of community forestry projects (transfer of management rights) likewise do not universally support the assumption that they result in better ecological outcomes (Casse and Milhøj, 2011).

The use of market-based mechanisms, such as payments for ecosystem services, is often held up as another promising strategy for promoting conservation. By paying local resource user to conserve rather than exploit natural resources, states, corporations and NGOs can theoretically reduce negative externalities and create efficiencies in the provision of public goods such as carbon sequestration, watershed protection, or biodiversity conservation (Ferraro, 2001). However, the success of these strategies is often context specific, and frequently limited by the lack of resources needed to overcome incentives for continued resource exploitation (Howe et al., 2014).

Deforestation associated with resource use has been particularly devastating in Madagascar (Moser, 2008) but the depletion of natural resources has not helped to lift people out of poverty; the country is among the poorest in the world [ranked 154th out of 185 countries covered by UNDP’s (2015) Human Development Index].

Finally, scholars of transnational governmentality call attention to the involvement of NGOs in environmental governance regimes. They argue that big international NGOs (BINGOs) have appropriated the decision-making process for conservation, and that their

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involvement represents an undemocratic approach to conservation governance (Duffy, 2010). They argue that the needs of the people are defined purely in economic terms, with little respect for their cultural values (Hanson, 2007).

4 The general land grabbing debate

Land grabbing refers to the acquisition of large blocks of land by big foreign investors, and critics of land grabbing deals highlight the implications that it may have for small farmers – many of whom may be evicted (Margulis et al., 2013). Hall (2013) is sceptical about the surge in studies on global land grabs, not because he denies the increasing interest in land acquisition, but rather because he believes there are serious issues with the way definitions are used and methods are applied. Does a land grab need to involve a foreign take-over of land? Does it have to be large scale? Does the deployment of the concept ‘grab’ indicate that no compensation is given to the original owners of land? In many locations in Southeast Asia, large scale land use changes are dominated by smallholders who are rapidly changing their crop patterns and agricultural practices. In this context, studies on ‘crop booms’ are better placed to evaluate social and economic issues than a narrow focus on land grabs (Edelman et al., 2013).

Screening 176 publications on land grabs, Oya (2013, p.1541) concluded: “The review could not find a single study meeting this criterion, i.e. one presenting an evaluation of impact with a rigorous baseline and a before and after comparison”. We do not know the overall impact, or proportion of deals that result in displacement, lack of compensation, economic income change, and eviction of local people, and this is why much of the literature ends up being quite speculative.

4.1 *Green grabbing and the central theoretical concepts: Primitive capital accumulation and the economy of repair*

Green grabbing is a subset of the land grabbing debate. In essence, scholars argue that green grabbing occurs when NGOs and private interests promote conservation interventions that promote neoliberal capitalisation through dispossession (Corson, 2011a). Proponents of the green grabbing concept argue that the creation of protected areas results in primitive capital accumulation; the commodification of nature exacerbates inequality and often works contrary to development goals; and conservation NGOs and private actors – legitimised by international discourse – promote dispossession through the creation of new green markets (Corson et al., 2013). We consider the contribution from Fairhead et al. (2012) to define the theoretical foundation of the green grabbing school, and most other papers we refer to within the green grabbing debate relate to empirical studies from Madagascar.

The first theoretical argument holds that conservation efforts result in primitive capital accumulation through dispossession, as local resource users are deprived of land and resources (Kelly, 2011). A similar process was observed by Marx, namely that the enclosure of the commons in England created a basis for the supply of labour and food commodities necessary for the industrialisation process, but it resulted in the eviction of farmers from their land (Benjaminsen and Bryceson, 2012). Ojeda (2012) argues that a similar process is occurring with green grabbing: the dominance of neo-liberal

conservation discourse and the transformation of environmental governance – including new roles for non-governmental and market-based-actors – have allowed capital expansion and conservation to become intrinsic and compatible objectives.

Following Corson's definition of green grabbing (Introduction), the 'enclosure' of protected areas alienates the farmers from the land, or at the least, leads to the formulation or configuration of new rules for access. The basic problem then, is the use of the concept of primitive capital accumulation in regards to the creation of protected areas. Designating new protected areas will never serve to boost economic development in general; on the contrary, conflicts exist between various land-uses, and protection always carries opportunity costs. Indeed, there are numerous examples that illustrate increasing opportunity costs for higher economic development (see Irawan et al., 2013; Ramamonjisoa and Rabemananjara, 2012).

The overall picture remains unchallenged – globally forests are still dwindling (FAO, 2011). While competition for land-use is certainly on the global agenda, it is not to be confounded with the presumed collusion of capital and environmental interests to use the same land for opposing purposes.

Green grabbing scholars further argue that the commodification of nature products and the calculation of opportunity costs reinforce inequalities. Today, new markets have emerged to repair damaged nature, and to counteract the negative effects of development by trading carbon, biofuels and selling biodiversity. Fairhead et al. (2012) consider that this economy of repair works counter to development and poverty goals; even the use of GIS maps is questioned. The valuation of nature is motivated by a desire to put land on the market, and ~~that~~ it enforces an accumulation process by dispossession. However, green grabbing cannot comply with both characteristics, being part of a primitive accumulation process (ultimately leading to capitalist development) and at the same time ruining development goals. Valuation in itself is an economic technique, and however disputable estimates might be, fixing a price on land or a natural resource is not commensurate with the eviction of people from their land.

The green grabbing scholars further argue that international environmental organisations are instrumental in creating new green markets that provide legitimacy for laws that outlaw local subsistence resource use (third pillar in the theory, Corson et al., 2013). This final theoretical argument of emerging markets appears the most convincing. Market and non-market funding mechanisms for global biodiversity goals average \$20 billion annually at best, covering an estimated 20% of total funding needs to protect sites of global conservation interest (Hein et al., 2013). Half of the estimated annual biodiversity allocation comes from government budgets (estimated at \$11 billion), and another \$4 billion from private donors, leaving the free market to account for approximately \$5 billion a year at a maximum.

One of the main market oriented instruments is supposed to be the Payment for Ecosystem Services (PES) mechanism, cf., Fairhead et al. (2012). Nevertheless, what appears to be a pure market-based financial strategy is often much more of a mixed arrangement in practice. No global record of the magnitude of PES funding worldwide is yet available, but in Mexico, where PES has supposedly met with success, the majority of funding comes from the central government and the World Bank (Shapiro-Garza, 2013). Even if markets are becoming more significant in raising funds for conservation, the process of privatisation is slow and may be insignificant compared to non-market-based funding mechanisms.

Critics also contend that conventional banks are turning their interest towards the financing of nature, pointing to the Forest Carbon Partnership Facility (Sullivan, 2013). However, this assertion lacks logic. The UN-World Bank backed REDD program (Reduction of Emissions from Deforestation and Degradation) which aims to reduce deforestation and increase carbon sequestration in developing countries, is 90% funded by donor countries (Norman and Nakhooda, 2015).

If green grab scholars are building their argument on the theory of primitive capital accumulation, they must explain how the pre-capitalist phase (undeveloped 'commons') can promote capitalisation. Indeed, one would expect the promotion of rules that liberalise resource use and lessen conservation measures, rather than rules that constrain resource use through conservation. Unless of course conservation efforts are decoupled from capitalist development, but the core argument of the green grabbing scholars is exactly that these ends go hand in hand. The last sub-argument on commercialisation of nature is more persuasive, and signs of the increasing market for natural values are compelling, but all existing major global and national nature conservation programs are funded primarily from public rather than private entities.

4.2 Green grabbing in practice: restrictions on future use, market forces and the green endorsement of extractive activities, using Madagascar as example

The question remains as to whether conservation NGOs work closely with big private enterprises to the detriment of local people's interests in Madagascar. Here we first we examine the empirical evidence for the presumed collaboration between conservation NGOs and private enterprises. Secondly, we examine the bioprospecting schemes, which supposedly induce local people to switch from traditional crops to become contract farmers. Third, we examine the green grabbing scholars' assertion that conservation NGOs endorse destructive mining activities.

Like other scholars, Corson (2011b) bases her understanding of the role of international conservation NGOs on the concept of primitive capital accumulation. By formulating restrictions that impede locals from present use of resources, international NGOs are allegedly locking up the resources for other future purposes of conservation or exploitation. The empirical example, used by Corson (2011b), comes from the process of a new park creation system in Madagascar, launched by Former President Ravolamanana in 2003. An interview with a peasant quoted by Corson (2011b, p.715) referred to monetary compensation as not being a real substitute for a generation long attachment to land. If the quote is correct, the issue is about the farmer's general attitude towards the land; it does not necessarily have anything to do with outsider appropriation. The passage simply implies that some farmers are unwilling to give up their land regardless of the compensation offered by outsiders.

Bioprospecting – the practice of selling specific species on the market – is another example of primitive accumulation, according to green grabbing theorists (Neimark, 2012). While the description of the process of collecting periwinkle plants in southern Madagascar is informative, the author fails to substantiate 'green grabbing at the farm gate'. In markets close to the provincial capital (Fort Dauphin), prices of food crops are now higher than the price of periwinkle, and farmers have switched back to food crops, rather than abandoning their farms. Neimark's article describes an intuitive case of how

the market forces work on the ground, but the reader is left bewildered about what this has to do with the green grabbing debate. Farmers were allowed at any stage to return to the former agricultural practices.

Cooperation between large private companies and NGOs is regarded as yet another example of primitive accumulation, a type of 'enclosure of public assets by private interests for profit, resulting in greater social inequity' [Fairhead et al., (2012), p.243]. The green grabbing scholars see major land-use changes by international developers as sanctioned by conservation NGOs in southern Madagascar, where the zoning of land boundaries for mining purposes is tangled with the designation of land for conservation goals (Seagle, 2012). The Rio Tinto company, which is exploiting limonite deposits in southern Madagascar, is offsetting the negative impact on the environment by creating conservation zones at the mining site (10% of the mining area) and off-site (Rio Tinto, 2013).

Seagle (2012) like Corson regards the creation of national parks, the actions of international NGOs, and the extractive activities of mining companies as a single and unified trend. Her conclusion that this is a concerted example of green grabbing rests on three sub-arguments: An increase in the protected area, the influence of the international NGOs on Malagasy environmental policy, and the partnership between mining companies and NGOs. However, each of these sub-arguments is problematic. First, we know that the protected area increased from 1 million ha in 1989 to currently 6 million ha (Ministry of Environment and Forest, unpublished data 2013; marine and terrestrial protected areas confounded). The terrestrial area under temporary protection is 4 million ha. In this sense, Seagle's (2012) has a point. However, should we conclude that whenever protected areas increase in coverage, we are dealing with green grabbing?

The second sub-argument, namely that environmental NGOs are exerting a strong influence behind the scenes, is presented with little evidence, apart from a reference to their participation in the Fifth World Parks Congress in Durban, South Africa in 2003. During the conference, the former President of Madagascar, Ravalomanana, announced his government's attention to increase the protected area coverage to 6 million hectares. Leaving aside their participation in international conferences and working groups, we know very little about the role of the NGOs (Corson, 2011a). The third sub-argument refers to the close collaboration between the private companies and conservation NGOs. Corporate actors and NGOs certainly share the same rhetoric, and international reports emphasise the role of private companies in achieving sustainable development. NGOs in Madagascar have entered partnerships with the mining company, Rio Tinto, and Seagle (2012) views the agreements as a sign of the NGO endorsement of its extractive activities.

The valuation of negative environmental externalities, like the devastation caused by mining activities, is heavily criticised by both the general green grabbing scholars (Fairhead et al., 2012; Seagle, 2012), but it is never made clear why the pricing of externalities is problematic. Fairhead et al. (2012, p.242), for example, note that 'prices are settling in such a way as to maximise both economies – of growth and repair – with the intent of getting the very most out of nature and with maximum efficiency'. But repairing degraded land is a cost, not a benefit.

The global report on The Economics of Ecosystems and Biodiversity is yet another example of how flawed economic analysis is used to justify the arguments of the green grabbing scholars (TEEB, 2010). This is how Fairhead et al.'s (2012) argument runs. A number of assumptions and methods are disputable in the Madagascar Rio Tinto report

made by IUCN [Templer et al. (2012) on behalf of IUCN]. First, IUCN bases their calculations on an exploitation area of 2,200 ha though Rio Tinto talks about 6,000 ha [Rio Tinto, (2013), p.5]. Second, restoration is counted as a net biodiversity gain (Templer et al., 2012) based on the assumption that the additional acreage in the avoidance zone is an improvement over the alternative of a continuing average rate of deforestation. This means that no net biodiversity gain can be shown in the case of Rio Tinto, unless we assume a continuous deforestation rate and that no action is taken to create protected areas in the littoral forests in the area in southern Madagascar. In light of an increasing protected area coverage in Madagascar and international pressure for more conservation due to the high deforestation rate in the region [3.9% per annum; Templer, (2012, p.19)], the assumptions in the IUCN report are unrealistic. Of the three sub-arguments, Seagle (2012) has a point of criticising the deal between the conservation NGOs and Rio Tinto.

4.3 *Green grabbing in Madagascar: an empirical example*

We now turn to the case study in Madagascar. Unfortunately, no quantitative analysis has yet been conducted to compare the situation before and after the arrival of any protection project. However, we are in a rare situation of being able to compare data collected from the same sites: both of the proponents of green grabbing (Corson, 2011a, 2011b) and the defenders of external conservation efforts (WWF) have collected data from the Fandriana-Vondrozo biological corridor. Each study differs in terms of the period under consideration, as well as the results of stakeholders' analysis. While Corson's study focuses on the period leading up to the designation of the biological corridor, the WWF research examines local people's reactions following the creation of the corridor.

Corson (2011a, 2011b) criticises the lack of consultation with local people prior to the creation of a new protected area. She accuses the coalition of private firms and NGOs that were involved in the designation of the corridor of colluding to grab the local land by reformulating the rights of local people. She argues that 'the details reveal how private sector interests, donors and transnational NGO actors were able to claim not only rights to resources, but also the authority to decide the new rights and acceptable uses associated with the new protected areas' [Corson, (2011b), p.711]. Corson's concluding remarks certainly call attention to the limited consultation process.

In contrast, during a period of three years, a WWF team conducted surveys to evaluate the success of new sustainable agricultural techniques. Whereas Corson collected information from the preparation or consultation phase, the WWF questioned local people about their perceptions of NGO outreach and developmental assistance as the strategy was being implemented. In 2009, a total of 400 households were interviewed, with interviews repeated in households in 2010 and 2011. Seven Community-Based Organizations (CBOs) were visited in Fandriana (close to the National Park), or 100 households; 9 CBO in Vondrozo (biological corridor) with 139 households; and 11 CBO in Midongy (surrounding the National Park Midongy Befotaka) with 201 households (50% of the households repeated the questionnaires over the following two years). In one site (Fandriana), the interview indicated that there was an average increase of 30% in income over time with no households experiencing a decrease. The 30% of increase is an average but other advantages came in addition. At least two households declared an entire change in life style: their children could attend the best

school in the area and they were able to construct a new house built from sustainable materials, and equipped with a solar panel. They also began to sell their new products in a local market (fish, cassava and green leaves). In another site (Vondrozo), the increase of income was 175% in 2011 for 46% of the surveyed households, whereas 64% of them registered a decrease of income. One of the explanations of the lack of success for the majority of households in this site was an observed failure to apply of all the techniques proposed by the agricultural advisers. The majority of the households preferred practicing the improved techniques on small areas of their plots as a safeguard to minimise risk of the new techniques, preferring to wait and see if there was an improvement in land productivity. The same observation was noticed in the last site (Midongy) where income went up by more than 100% for half of the households (46%) and decreased for 56% of the households.

Deforestation rates were calibrated with the period of 2000–2005 as a baseline (prior to the WWF activities at the sites). Compared to the after project period, from year 2005 to 2010, 66% of the communities registered a decrease in the deforestation rate by approximately 50% to 100%. In the remaining communities (control group) not included in the WWF program the deforestation rate increased by up to 174%. The majority of the households reported a strong desire for access to the state and recognition of their plight by government agencies. In the absence of a state, the WWF took over the state's role to some extent, and the community members displayed gratitude for the services the NGO provided to them. After three years of NGO presence and improved agricultural training and extension services, the farmers requested the return of WWF even when the funding was thwarted: a sign that villagers were seeking assurance that they were not working alone, and that they were still using the new improved agricultural practices.

The basic concepts within the green grabbing debate – primitive capital accumulation and the economy of repair – are rather hard to apply in our empirical case. No multinational enterprise was present, and the biological corridor is not a market. So commercialisation of nature did not take place in the case of the Fandriana-Vondrozo corridor. We also learn that 'post-grabbing' studies are more desirable than pure discussions of the consultation process. Green grabbing scholars need to be cautious about defining the time of intervention precisely. Data collected by WWF strongly suggest a positive impact on livelihoods for households that adhered to new agricultural practices, along with significant improvements in conservation outcomes. However, the data also point to contextual factors that may influence implementation. In all three sites, better off households were more likely to adopt new agricultural techniques introduced by WWF. Since no real control groups were involved in the data collection, no firm conclusion is attempted. In Fandriana, the results were much more positive in economic terms compared to the two other sites. Since no household at Fandriana experienced a decrease in income compared to the other two sites, it is possible that ethnicity, perhaps more than income, could be the crucial factor – though further studies will have to test this hypothesis.

We argue that while the green grabbing scholars draw attention to the lack of stakeholder inclusion in the designation of conservation areas, the less than ideal negotiation process does not necessarily constitute evidence of dispossession, or result in detrimental social or ecological outcomes. And while it is true that the NGO has essentially replaced the function of the state entities (as predicted by green grabbing theory) the question remains as to what would take its place – especially in light of ongoing political turmoil and limited state capacity. The crucial point is that local people

are satisfied with the arrival of WWF. The non-monetary advantages of the support of WWF are countless; the NGOs for conservation are at least aware of the problems on the ground, and have shown evidence that they are working to fix them. Furthermore, while green-grabbing scholars argue that collusion between international NGOs and multi-national corporations are a defining feature of green grabbing, in this case, there was little evidence that multi-nationals were involved.

5 Conclusions

The objective of this paper was to discuss the foundation in the green grabbing debate, using Madagascar as an example.

Rather than inferring collusion between NGOs and multi-nationals, proper actor analyses, including analysis of the role of the state, is imperative. In the Fandriana Corridor, it is clear that local people did not aspire to live in a rural context where there is little to no state involvement, and they did not react homogeneously to new agricultural techniques and innovations. In other words, local peoples will react differently to conservation or developmental interventions, and there will likely be winners and losers. At the end of day, more analytical work in Madagascar or in other developing countries might show that the more ingenious households or specific ethnic groups are those benefiting from external conservation interventions. Future research should therefore investigate specific measures that can promote the adoption of new agricultural practices in households that have previously been unwilling or unable to adopt them.

Green grabbing is largely predicated on the theory of primitive capital accumulation or accumulation by dispossession. In the general land-grabbing debate, the concept might be defensible, as foreign investors seek to maximise profit through large-scale acquisitions of land in poor developing countries. Our argument pertains to the apparent anomaly of designing a protective area for capital accumulation. Land is either exploited or it is protected, it cannot fulfil both objectives simultaneously.

If the green grabbing debate is to contribute to the wider discussion on conservation, development and environmental governance, scholars will have to make their stakeholder analysis more inclusive (the state is an important player) and probably refrain from looking at local people as a homogenous group.

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